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Subject: No subject

Results for 5 wells:

<https://www.documentcloud.org/documents/326876-hw12-epa-report-water-test-results-binder-dimock.html>

WORTH READING: DIMOCK WATER EXPERT ANALYSIS

by Josh Fox on Tuesday, March 20, 2012 at 9:31pm ·

Analysis of Dimock Water tests from Professor Ron Bishop and MacArthur "Genius Award" winning chemist and first responder Wilma Subra.

Observations on Selected USEPA Summaries of Well Water Analysis

from Dimock, Pennsylvania, 2012.

Ronald E. Bishop, Ph.D., CHO

I have reviewed biological and chemical analysis summaries of Dimock homeowners' wells identified by the USEPA as HW-02, HW-04, HW-06, HW-08a, HW-12 and HW-17. These are my observations:

The methods used to determine coliform and heterotrophic bacteria were very poorly performed: results from ten out of the twelve analyses reported were either rejected or clearly inconsistent. Therefore, they provide no basis to assess the presence or absence of microbes in the well water samples.

Minimum detection limits for glycol ethers and other detergents were unacceptably high. Further, no methylene blue active substance (MBAS) test results were reported, in spite of the fact that test results for nitrates (which might complicate MBAS interpretation with respect to surfactants) were reported. Therefore, no conclusions regarding pharmacologically significant concentrations of glycol ethers (particularly the endocrine disruptor 2-butoxyethanol) can be made from these results.

Methane concentrations were reported at over 7 parts per million (ppm or mg/L) in 4 of these wells: HW-02 (18 mg/L), HW-06 (23 mg/L), HW-08a (15 mg/L) and HW-12 (52 mg/L, a detonable concentration after outgassing at surface temperature and pressure). Ethane: methane ratios in these water samples ranging from 0.035 to 0.038 implicate thermogenic origins for these gases. Therefore, these reports provide evidence that nearby access to deep gas reservoirs has negatively impacted the quality of water in these wells. **Any suggestion that water from these wells is safe for domestic use would be preliminary or inappropriate.**

Non-zero concentrations of polycyclic aromatic hydrocarbons (PAH's) were reported

in HW-02, HW-04, HW-06 and HW-8a; they included anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, dibenzofuran, phenanthrene and pyrene. These PAH's are significant carcinogens at any concentration. Further, non-zero concentrations of chloroethane and chloromethane were found in HW-12, the water well with the highest ethane and methane concentrations of all those reported here. Although not classifiable as human carcinogens, these chemicals may harm organs including heart, kidney and brain. Therefore, the use of water from these five wells without further testing to establish biochemical safety would be inappropriate.

Supra-MCL levels of arsenic, fluoride, lithium and sodium (in addition to ethane and methane) were found in well HW-06. **This particular combination of analytes would be consistent with the introduction of gas drilling / hydraulic fracturing additives into this water well. Therefore, further study of this possibility is warranted.**

In summary, the decision of the USEPA to certify these six wells in Dimock, PA as "safe" was, in this reviewer's opinion, extremely premature and without foundation.

Dimock, PA Water Well Testing Performed by EPA

Evaluation of Six Residential Water Well Summary Sample Results by Wilma Subra

The summary results of six residential water well samples, collected between 1-24-12 and 1-27-12 by the EPA from Dimock, PA, were reviewed.

The residential well water samples contained arsenic (4 of 6 wells), ethane and methane (all 6 wells), uranium (5 of 6 wells), Polynuclear Aromatic Hydrocarbons (4 of 6 wells) and volatile organic chemicals (3 of 6 wells). One well contained chromium.

Well HW-06 had the highest concentration of arsenic, boron, chromium and sodium. Well HW-02 had the highest concentration of uranium and more than 10 individual Polynuclear Aromatic Hydrocarbons including Benzo(a)pyrene. Well HW-12 had the highest concentration of barium, ethane and methane. Well HW-17 had the highest concentration of strontium.

Arsenic was detected in four of the six well waters from a concentration of 2.7 ug/l to 7.6 ug/l in the whole water samples. The filtered water samples contained 2.4 to 6.3 ug/l. The EPA Primary MCL value for Arsenic is 10 ug/l. The Arsenic concentration in the whole water was up to 76% of the EPA Primary MCL value.

The large number of chemicals detected in the water wells, even though present in concentrations below primary and secondary MCL, pose a cumulative risk threat to individuals continuing to be exposed to the water source. Additional sampling should be performed to determine the source or sources of contamination in the residential wells and the full vertical and horizontal extent of each contaminant plume.

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